

ABSTRACT OF THE INVENTION

The method is provided for
~~The present invention relates to a novel tissue culture system that provides~~

for the long term culture of proliferating hepatocytes that retain hepatic function/
to produce an hepatic cell culture

- 3 ~~Disclosed are methods and compositions for ex-vivo culturing of~~ *are cultured ex vivo* hepatocytes and
 4 nonparenchymal cells on a matrix coated with a molecule that promotes cell adhesion,
 5 proliferation or survival, in the presence of growth factors, resulting in a long-term
 culture of proliferating hepatocytes that retain hepatic function. The co-culturing method
 results in the formation of matrix/hepatic cell clusters that may be mixed with a second
 structured or scaffold matrix that provides a three-dimensional structural support to form
 6 structures analogous to liver tissue counterparts. ~~The hepatic cell culture system~~ *method* can be
 10 used to form bio-artificial livers through which a subjects blood is perfused.

Alternatively, ~~the novel~~ *the* hepatic cell culture ~~system~~ *[]* may be implanted into the body of a
 recipient host having a hepatic disorder. Such hepatic disorders, include, for example,
 cirrhosis of the liver, induced hepatitis, chronic hepatitis, primary sclerosing cholangitis
 and alpha₁ antitrypsin deficiency.

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